We Claim:

1. A sheet feeder for the synchronized feeding of sheets to a sheet processing machine having a machine drive, the sheet feeder comprising:

drive assemblies for driving the sheet feeder and a drive train connecting said drive assemblies to the machine drive of the sheet processing machine;

a clutch selectively switchable with a determined angular position into said drive train between said drive assembly of the sheet feeder and the machine drive of the sheet processing machine; and

a switch-on torque limiter with a pretensioned spring element connected in said drive train.

2. The sheet feeder according to claim 1, wherein said switch-on torque limiter is disposed between the machine drive of the sheet processing machine and said clutch.

3. The sheet feeder according to claim 1, wherein said switch-on torque limiter is disposed between said clutch and said drive assemblies of the sheet feeder.

4. The sheet feeder according to claim 1, wherein said switch-on torque limiter includes four stationary and symmetrically disposed deflection rollers and two displaceable deflection rollers.

5. The sheet feeder according to claim 4, wherein said switch-on torque limiter includes an endless belt partly wrapped around said four stationary deflection rollers and around said two displaceable deflection rollers.

6. The sheet feeder according to claim 4, which further comprises a carriage carrying said displaceable deflection rollers, and a second spring element holding said carriage in a pretensioned state in an operating position.

7. The sheet feeder according to claim 4, wherein said pretensioned spring element is a first spring element configured to absorb a torque surge introduced when the machine drive is first connected to said drive assemblies of the sheet feeder, and a second spring element is configured to cushion a recoil movement of said switch-on torque limiter.

8. The sheet feeder according to claim 7, wherein said first spring element and said second spring element are disposed coaxially inside one another.

9. The sheet feeder according to claim 6, which comprises an actuating motor operatively associated with said carriage for adjusting said carriage specifically to adjust a phase between the machine drive and said drive assemblies of the sheet feeder.

10. The sheet feeder according to claim 9, wherein the machine drive includes a pinion and said drive train includes a pulley wheel, and wherein and actuating motor is operatively associated with said carriage for adjusting a phase between said pinion and said pulley wheel.